ABSTRACT

A method, system and apparatus for use in computer-aided design, computer-aided manufacturing, computer-aided engineering and product lifecycle management. An efficient, non-centralized communications framework makes "synchronous" collaborative design possible. Users are resident at workstations that are connected in a peer-to-peer arrangement. In a collaborative design session, the model is resident in memory at each workstation. Modifications are made at any workstation, and commands, which are interpreted at each workstation to effect the modifications, are transmitted over the network. In addition, cell descriptors may be used to identify one or more geometric cells of a model. The cell descriptors are in the form of scripts specifying constraints or filters for identifying cells. The constraints are based on characteristics of items in the model, or associations between items in a model, that are readily discernable to the user, and are therefore easily written and susceptible to easy distribution to other systems.